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EXAMINER	
WOLLSCHLAGER, JEFFREY MICHAEL	
ART UNIT	**PAPER NUMBER**
1732	

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/795,800	MENENDEZ ET AL.	
	Examiner	Art Unit	
	Jeff Wollschlager	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *11-15 and 21-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 16-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/11/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-10 and 16-20 in the reply filed on July 5, 2006 is acknowledged. The traversal is on the ground(s) that practicing the claims of the method invention necessarily involves practicing the claims of the apparatus invention and that the apparatus claims refer to the method claims. This is not found persuasive because the apparatus can be used to practice many other materially different methods. A method of building a structure comprising metal beams with a rough surface is one example. The intended use limitation of the apparatus does not limit the patentability of the apparatus claim. Further, claim 1 does not require the compensating tooling be made of metal as is required in claim 11.

The requirement is still deemed proper and is therefore made FINAL.

Claims 11-15 and newly submitted claims 21-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant is required to provide a current listing of the claims including a current status identifier for each claim in any subsequent response to this office action in order to avoid a notice of noncompliant amendment.

Claim Objections

Claims 1-10 and 16-20 are objected to because of the following informalities: The claims include a plurality of spelling and grammatical errors. Appropriate correction is required. For example, claim 1 recites "prepeg" and "the assembly the first". Claim 6

recites "in the the". Claim 7, recites "rough surface (15, 20)". It is understood the intended recitation is "rough surface (16, 20)". Claim 8 recites "fro". Claim 15 recites "915, 20". Claim 16 recites, "a stiffener fro". Claim 19 recites "beams (4)". It is understood the intended recitation is "beams (14".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 and 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "rough surface" in claim 1 is a relative term which renders the claim indefinite. The term "rough surface" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In the instant application (U.S. Patent Application Publication 2005/0127576), paragraph [0026]) states the purpose of the rough surface is to promote the grip of the tooling with the stiffener. For the purposes of examination, any tooling that promotes the grip of the tooling with the stiffener is understood to have a "rough surface". Further, paragraph [0046], goes on to state that "in an embodiment of the invention the surface of the tooling in contact with the stiffener is mechanized to get a rough surface that in combination with the vacuum bag and the autoclave promotes enough friction to get a

common expansion of both elements". It is unclear how the rough surface is intended to limit the claim and what the relationship and criticality is between the potential ranges, of rough surfaces, vacuum bag operating conditions and autoclave operating conditions.

Additionally, claim 1 states that "at least a first subcomponent" and "at least a second subcomponent" are provided. However, the rest of the claim only provides teaching for a first and second subcomponent to obtain a monolithic composite structure "consisting of both subcomponents". It is unclear how there can be more than two subcomponents and how the additional subcomponents would become part of the monolithic structure.

Claims 5, 6, and 18-20 are indefinite because it is unclear what the limiting effect is of the recitation "adapted to the geometry". For the purposes of examination an L-shaped beam is understood to be adapted to the geometry of the second subcomponent.

Regarding claim 8, the phrase "and the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "and the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). For the purposes, of examination a surface with a "friction enhancer" relative to the "metal beams" of claim 5 is considered to meet the claim.

Claim 9 recites the limitation "the reinforcement (graphite, glass, etc.)" and "matrix (thermoset of thermoplastic)". There is insufficient antecedent basis for this

limitation in the claim. Further it is unclear what limiting effect the recitation of the particular materials in parentheses is intended to provide the claim.

Claims 16 and 17 are indefinite because it is unclear what limitation "for same" is intended to provide the claims. For the purposes of examination it is understood that the second subcomponent is a stiffener for the aircraft skin

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1, 3-7, 9,10, 17, 19, and 20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7 and 14 of U.S. Patent No. 6,508,909. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 1 of U.S. Patent 6,508,909 claims a process for manufacturing a structural member from pre-cured element composite materials and green stiffeners (preamble) comprising: providing at least a first subcomponent of composite material (steps (a) and (b)); providing at least a second subcomponent of composite material (step (c)); attaching an expansion compensating tool/angle pieces to the second subcomponent (step (d)); placing the second subcomponent with said tooling on the first subcomponent and bonding it to the latter by means of an uncured structural adhesive (step (d)); covering the assembly with a vacuum bag (step (e)); performing an autoclave cycle for curing the curable material (step (f)); and withdrawing the assembly from the curing autoclave (step (f)).

Regarding claim 1 of the instant application, claim 1 of the '909 patent does not explicitly state the surface of the tooling is a rough surface. However, the recitation rough surface is a relative term. The angle pieces of claim 1 in the '909 patent perform the same function in the same manner as the tooling in the instant claim. As such, the angle pieces are understood to have a rough surface. These angle pieces also intrinsically have machined surfaces. Further, claim 1 of the '909 patent does not teach removing the angle pieces/tooling from the composite structure. However, this is implied in the '909 patent and would have been obvious to one having ordinary skill in the art in order to be able to reuse the angle pieces and to not provide unnecessary weight to the completed part.

Claims 2, 16, and 18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7, and 14 of U.S. Patent No.

6,508,909 in view of Wilden et al. (U.S. Patent 5,242,523) or Breur et al. (U.S. Patent 6,306,239). The '909 patent claims employment of a precured first component and an uncured second component. The '909 patent does not claim using a precured second component. However, in analogous methods, Wilden et al. (col. 4, lines 58-65) teach that either precured or uncured second components may be used and Breur et al. (Abstract) teach using precured second stiffening/stringer components. One having ordinary skill would have been motivated to utilize precured second components, such as stiffener/stringer components, because they are easier and cleaner to handle and are able to provide a support structure immediately with the initial application to the first component.

Claim 8 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7, and 14 of U.S. Patent No. 6,508,909 in view of Morrison et al. (U.S. Patent 6,733,907; issued May 11, 2004) or Holsinger (U.S. Patent 6,245,275; issued June 12, 2001). The '909 patent claims angle pieces/L-shaped beams/tooling that intrinsically have a rough surface. The '909 patent does not claim attaching a friction enhancer selected from sandpaper and the like. However, in analogous methods, Holsinger (Figure 2 (150); col. 5, line 10-17) and Morrison et al. (col. 10, lines 1-20) each disclose enhancing the friction characteristics of the surface of the tooling component. One having ordinary skill would have been motivated to enhance the friction characteristics of the tooling component in order to better grip the second component.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-7, 9, 10, 16, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Breur et al. (U.S. Patent 6,306,239; issued October 23, 2001).

Regarding claims 1 and 2, Breur et al. teach a process for manufacturing a monolithic composite structure from precured subcomponents comprising: providing at least a first subcomponent of composite material; providing at least a second subcomponent of composite material; attaching expansion compensating tooling/strengthening profile members to the second subcomponent, the surface of said tooling being a rough surface; placing the second subcomponent with said tooling on the first subcomponent and bonding it to the latter by means of an uncured structural adhesive; covering the assembly with a vacuum bag; performing an autoclave cycle for curing the curable material; withdrawing the assembly from the curing autoclave; and removing the tooling to obtain a monolithic composite structure (Abstract; Figure 2 (3) (7); Figure 3; col. 6, lines 9-22; col. 7, lines 4-38; col. 8, lines 13-17).

As to claims 4 and 16, the first component taught by Breur et al. is an aircraft skin and the second component is a stiffener (Abstract; col. 1, lines 11-22; col. 5, lines 22-33).

As to claims 5, 6, 18 and 20, Breur et al. teach the tooling consists of L-shaped metal beams adapted to the geometry of the second component (col. 7, lines 5-28; Figure 2).

As to claim 7, the metal tooling surface taught by Breur et al. would have inherently been machined in order to produce the part.

As to claim 9, Breur et al. teach the method of claim 1 and employ first and second composite components (Abstract).

As to claim 10, Breur et al. teach the method of claim 1 and also inherently employ temperature and pressure within the vacuum bagging and autoclaving step within recommended ranges in order to produce a viable product (col. 7, lines 30-40).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-7, 9, 10, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cerezo Pancorbo et al. (EP 1134070; published September 19, 2001).

Regarding claims 1 and 3, Cerezo Pancorbo et al. teach a process for manufacturing a monolithic composite structure from a precured and an uncured

subcomponent comprising: providing at least a first subcomponent of composite material; providing at least a second subcomponent of composite material; attaching expansion compensating tooling/angle pieces to the second subcomponent, the surface of said tooling being a rough surface; placing the second subcomponent with said tooling on the first subcomponent and bonding it to the latter by means of an uncured structural adhesive; covering the assembly with a vacuum bag; performing an autoclave cycle for curing the curable material; withdrawing the assembly from the curing autoclave (Abstract; paragraphs [0003, 0013, 0014, 0020, 0021, 0031, 0036, and 0038]; claim 1). Cerezo Pancorbo et al. do not explicitly teach removing the angle pieces/tooling from the composite structure. However, this is implied in the reference and would have been obvious to one having ordinary skill in the art in order to be able to reuse the angle pieces for subsequent use and to not introduce unnecessary weight to the completed aeronautical wing.

As to claims 4 and 17, the first component taught by Cerezo Pancorbo et al. is an aircraft skin and the second component is a stiffener (paragraphs [0013 and 0014]).

As to claims 5, 6, 19 and 20, Cerezo Pancorbo et al. teach the tooling consists of L-shaped metal beams adapted to the geometry of the second component (Figure 2 (4, 4'); paragraph [0020]).

As to claim 7, the metal tooling/angle piece surfaces taught by Cerezo Pancorbo et al. would have inherently been machined in order to produce the part.

As to claim 9, Cerezo Pancorbo et al. teach the method of claim 1 and employ first and second composite components (Abstract; claim 1).

As to claim 10, Cerezo Pancorbo et al. teach the method of claim 1 and also inherently employ temperature and pressure within the vacuum bagging and autoclaving step within recommended ranges in order to produce a viable product (paragraphs [0036-0038]; claim 1).

Claims 2, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cerezo Pancorbo et al. (EP 1134070; published September 19, 2001), as applied to claims 1, 3-7, 9, 10, 17, 19, and 20, in view of Wilden et al. (U.S. Patent 5,242,523).

As to claim 2, Cerezo Pancorbo et al. teach the method of claim 1 as discussed in the 103(a) rejection above, but do not teach using a precured second component. However, in an analogous method, Wilden et al. (col. 4, lines 58-65) teach that either precured or uncured second components may be used.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to utilize precured second components, such as the stiffener/stringer components, as taught by Wilden et al., because they are easier and cleaner to handle and are able to provide a support structure immediately with the initial application to the first component.

As to claim 16, the first component taught by Cerezo Pancorbo et al. is an aircraft skin and the second component is a stiffener (paragraphs [0013 and 0014]).

As to claim 18, Cerezo Pancorbo et al. teach the tooling consists of L-shaped metal beams adapted to the geometry of the second component (Figure 2 (4, 4'); paragraph [0020]).

Claims 1, 3-10, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cerezo Pancorbo et al. (EP 1134070; published September 19, 2001) in view of Morrison et al. (U.S. Patent 6,733,907; issued May 11, 2004) or Holsinger (U.S. Patent 6,245,275; issued June 12, 2001).

As to claims 1, 3-7, 9, 10, 17, 19, and 20 Cerezo Pancorbo et al. teach the method as discussed in the 103(a) rejection above. However, as noted in the 112 2nd rejection above, the meaning of the term "rough surface" is indefinite. Therefore, Holsinger (Figure 2 (150); col. 5, line 10-17) and Morrison et al. (col. 10, lines 1-20) are provided and each discloses enhancing the friction characteristics of the surface of the tooling component.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to actively roughen the surface of the tooling component/profile members taught by Breur et al. in view of the teaching of both Holsinger and Morrison et al. individually, for the purpose of more effectively achieving the purpose taught by Breur et al. to prevent sliding or shifting of the tooling (col. 7, lines 24-28) and to ensure a better grip of the tooling with the subcomponent.

As to claim 8, it is noted that the friction coefficient of rubber is higher than the friction coefficient of steel. It is further noted that grit/sand is a known means in the art of providing a roughened surface, as disclosed by Morrison et al. (col. 10, lines 9-10).

Claims 2, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cerezo Pancorbo et al. (EP 1134070; published September 19, 2001) in view of Wilden et al. (U.S. Patent 5,242,523) and further in view of Morrison et al. (U.S. Patent 6,733,907; issued May 11, 2004) or Holsinger (U.S. Patent 6,245,275; issued June 12, 2001).

As to claims 2, 16, and 18 Cerezo Pancorbo et al. in view of Wilden et al. teach the method as discussed in the 103(a) rejection above. However, as noted in the 112 2nd rejection above, the meaning of the term "rough surface" is indefinite. Therefore, Holsinger (Figure 2 (150); col. 5, line 10-17) and Morrison et al. (col. 10, lines 1-20) are provided and each discloses enhancing the friction characteristics of the surface of the tooling component.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to actively roughen the surface of the tooling component/profile members taught by Breur et al. in view of the teaching of both Holsinger and Morrison et al. individually, for the purpose of more effectively achieving the purpose taught by Breur et al. to prevent sliding or shifting of the tooling (col. 7, lines 24-28) and to ensure a better grip of the tooling with the subcomponent.

Claims 1, 2, 4-10,16, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breur et al. (U.S. Patent 6,306,239; issued October 23, 2001) in view of Morrison et al. (U.S. Patent 6,733,907; issued May 11, 2004) or Holsinger (U.S. Patent 6,245,275; issued June 12, 2001).

As to claims 1, 2, 4-7, 9, 10, 16, 18 and 20, Breur et al. teach the method as discussed in the 102(b) rejection above. Breur et al. further teach the tooling comprises "protruding webs" (col. 7, lines 22-38). However, as noted in the 112 2nd rejection above, the meaning of the term "rough surface" is indefinite. Therefore, Holsinger (Figure 2 (150); col. 5, line 10-17) and Morrison et al. (col. 10, lines 1-20) are provided and each discloses enhancing the friction characteristics of the surface of the tooling component.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to actively roughen the surface of the tooling component/profile members taught by Breur et al. in view of the teaching of both Holsinger and Morrison et al. individually, for the purpose of more effectively achieving the purpose taught by Breur et al. to prevent sliding or shifting of the tooling (col. 7, lines 24-28) and to ensure a better grip of the tooling with the subcomponent.

As to claim 8, it is noted that the friction coefficient of rubber is higher than the friction coefficient of steel. It is further noted that grit/sand is a known means in the art of providing a roughened surface, as disclosed by Morrison et al. (col. 10, lines 9-10).

Conclusion

All claims are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-

8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager
Examiner
Art Unit 1732

August 9, 2006

CHRISTINA JOHNSON
PRIMARY EXAMINER
8/11/06